Discussion of Last Issue's Case Scenario

In the last issue, Dr. Lepor presented this case report:

A 53-year-old man with a prostate-specific antigen (PSA) level of 4.2 ng/dL has a benign 40 g prostate on digital rectal examination. The patient undergoes a 12-core biopsy of the prostate, which shows a single focus of prostatic intraepithelial neoplasia (Figure 1).

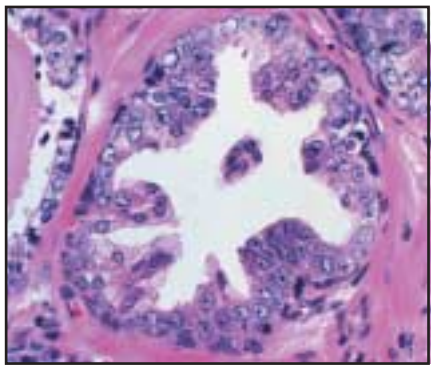

Figure 1. *High-grade prostatic intraepithelial neoplasia: micropapillary pattern (hematoxylin and eosin, × 400).*

The following management options were offered:

1. Immediate repeat 12-core biopsy
2. Immediate repeat saturation biopsy
3. Immediate repeat biopsy of transition zone
4. Repeat biopsy in 1 year
5. Repeat biopsy in 3 years independent of PSA change

AUTHOR'S DISCUSSION

High-grade prostatic intraepithelial neoplasia (HGPIN) was described by Brawer and associates in 1991.[1] Because HGPIN was often observed in proximity to prostate cancer, it was assumed to represent a premalignant condition.[2]

Transrectal ultrasound–guided biopsy became widely accepted for the diagnosis of prostate cancer in the early 1990s. Hodge and colleagues[3] recommended performing sextant biopsies directed bilaterally to the apex, middle, and base of the prostate in the midsagittal plane. The number and orientation of these biopsies were established empirically.

For cases in which HGPIN was detected on transrectal ultrasound–guided sextant biopsy, rebiopsy yielded a diagnosis of prostate cancer in 27% to 100% of cases.[4] Therefore, repeat biopsy was deemed mandatory if HGPIN was observed in a 6-core sextant biopsy. Several investigators have recommended that a 12-core biopsy be routinely performed in order to provide adequate tissue sampling to exclude prostate cancer.[5] In the modern era, a 6-core biopsy is considered inadequate.

The number of tissue cores required to exclude coexisting prostate cancer in the presence of HGPIN remains controversial. Taneja and associates[4] of New York University (NYU) Medical Center repeated a 12-core biopsy in men who were found to have HGPIN without co-existing prostate cancer, and only 2% of men were found to have prostate cancer. This implies that a 12-core biopsy is adequate to exclude co-existing prostate cancer in men with HGPIN. Other investigators have reported a higher rate of prostate cancer detection following an initial 12-core biopsy.[6] On the basis of our data, we would not recommend repeat biopsy.

Biopsy of the transition zone rarely yields prostate cancer when it is performed at the time of initial biopsy. There is no consensus regarding the indication for transition zone biopsy. We generally perform transition zone biopsy in cases where the PSA progressively rises despite multiple negative peripheral zone biopsies.

We have shown that men with HGPIN are at higher risk for developing prostate cancer independent of changes in PSA level.[7] Repeat 12-core biopsies were performed on men 3 years after the initial diagnosis of HGPIN. Twenty-five percent of these men were found to have prostate cancer.[7] Three of these men underwent radical retropubic prostatectomy and all had pT2 disease. The changes in PSA level were similar in men with or without prostate cancer on the repeat biopsy, indicating that rebiopsy should be performed in all men independent of PSA change. We do not know if the HGPIN developed into prostate cancer or a coexisting cancer grew to a detectable level; whatever the case, the cancer detection rate of 25% argues in favor of repeating the biopsy. The optimal timing for repeat biopsy in the presence of HGPIN is unknown.

We believe it is unlikely that men with HGPIN will develop local or systemic metastases in a 3-year interval. Therefore, at NYU Medical Center, we would manage this patient with repeat biopsy in 3 years independent of PSA change. ■

References

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